

# Rediscovery of Robert Wight's *Vanda wightii* Rchb. f. (Orchidaceae)

C. Sathish Kumar, P. C. Suresh Kumar and E. George<sup>1</sup>

Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram 695 562, Kerala, India.

<sup>1</sup>Merry Land Garden, Alattil P. O., Thalapuzha 670 644, North Wayanad, Kerala, India.

E-mail : sathishkumar\_57@rediffmail.com

## Abstract

*Vanda wightii* Rchb. f., first collected in 1849, is rediscovered from Karnataka and Kerala after 150 years. Evidence of its occurrence in Sri Lanka is confirmed. A historical sketch, an exhaustive taxonomic description and a detailed illustration of this species are provided. Leaves of this species are characteristically very long (35 cm or more) and inflorescence is 2-3 flowered. Morphological characters which make this species distinct from *V. thwaitesii* Hook. f., with which it is often confused, are tabulated.

**Keywords:** *Vanda wightii* Rchb. f. , Rediscovery, Southern India, Occurrence in Sri Lanka

## Introduction

Robert Wight (1796-1872), the surgeon turned botanist of eminence, collected vigorously in Southern India and trained artists like Govindoo and Rungiah. Initially, he sent several sets of collections to leading botanists in Britain and Europe to name. He built up a library, herbarium and a hefty collection of over 2000 illustrations of South Indian plants (Wight, 1838-1853; 1840-1850; 1846-1851). His *Icones* contained 170 orchids, mostly from southern India. Noltie (2006) has published a beautiful account of Wight's botanical works in India and provided an impressive list of his taxa and the basis of their nomenclature. *Vanda wightii* Rchb. f. (1864) is one of the orchids named in his commemoration based on his collections. This is the only species that remained uncollected after Wight's type collection.

Wight collected this orchid in 1849 from Coimbatore, Paulghatcherry and Vaulyar. Contrary to his practice, Wight did not illustrate it but distributed its sheets to Europe. Reichenbach f. (1864), the German professor and orchidologist, acquired many orchids that Wight had collected from Southern India and among them were six specimens of this species. Reichenbach f. (1864) described *Vanda wightii* based on Wight's collections and Thwaites' lone collection (C.P. 2346) from Sri Lanka. These specimens are now preserved at Natural History Museum and

Herbarium, Wien, Austria (W). One of the duplicates of Wight's specimen bearing the number 2977 'distributed at the Royal Gardens, Kew during 1866-68' and labelled in Reichenbach f.'s hand reached Gray Herbarium of Harvard University and is now at Oakes Ames Herbarium (AMES). Reichenbach f.'s description, as usual, was very brief. He cited Nilgiris broadly but wrongly as its type locality because Wight's initial work was done on Nilgiri plants. For the next 150 years nobody collected this species either from India or Sri Lanka.

J. D. Hooker (1890) included *Vanda wightii* in the group of species unknown to him along with *V. brunnea*, *V. stangeana* and *V. vipedii*, all described by Reichenbach f., as he could not study any specimens. As Fischer (1928) too could not study any material of



Robert Wight (1796-1872)

© Hunt Institute for Botanical Documentation

this species, he simply translated the protologue and used it in the key. Not having collected or seen anything referable to *Vanda wightii*, Hooker's comments and Fischer's translation were the only cue which the later botanists largely depended on for declaring it as endemic, rare, endangered, threatened or possibly extinct (Henry *et al.*, 1978 (1979); Jain & Mehrotra, 1984; Ahmedullah & Nayar, 1986; Joseph, 1987; Mohanan & Balakrishnan, 1991; Sathish Kumar 1986; 1989; 1991 & 2000; Nayar & Sastry, 1987). Sri Lankan botanists do not seem aware of the existence of this species there (Hook. f. in Trimen, 1898; Alston, 1931; Jayaweera, 1982; Fernando *et al.*, 2003).

One of us (EG) got a specimen in fruiting stage, seemingly the long awaited *Vanda wightii* from Subramanyam in Karnataka in early 2000. We kept that specimen under cultivation at Tropical Botanic Garden and Research Institute (TBGRI) hoping to see it in flower. This lone plant flowered in November 2000 from which we drew up detailed description and analytical sketches for comparison with the type at W. Digital images of all specimens and Reichenbach f. icon kindly sent to us by Dr Bruno (W) were a perfect match of our collection. We gathered a few more specimens from Belthangadi near Subramanyam in Karnataka and kept them under cultivation at TBGRI. This flowered in October 2001. The one foot long leaves were very characteristic. Flowers were fragrant like *V. tessellata*, had pure white lip and 5-6 mm long column broadened at apex. Our searches at adjacent Nediya and suburbs in Kannur also paid dividends. Of late, one of us (EG) could locate some populations at Melattur near Palakkad. As information available on this species is Reichenbach f.'s protologue and its corrupt versions, we provide here a detailed description and illustration made after our fresh collections.

*Vanda wightii* Rchb. f., Ann. Bot. Syst. 6:932.1864; Hooker f., Fl. Brit. India 6:54. 1890; Fischer in Gamble, Fl. Pres. Madras 3:1445. 1928; Henry *et al.*, J. Bombay nat. Hist. Soc. 75:697. 1978 (1979); Ahmedullah & Nayar, Endemic Pl. Ind. Reg. 253.1986; Joseph, Orch. Nilgiris 177. 1987; Mohanan & Balakrishnan in Karunakaran, C. K. (Ed.), Proc. Symp. Rare, Endang. End. Pl. West. Ghats 189. 1991; Sathish Kumar in Nair *et al.* (Eds), Eco-Develop. West. Ghats 51. 1986 & in Karunakaran, C. K. (Ed.), Proc. Symposium on Rare, Endang. End. Pl. West. Ghats 213. 1991; Nayar & Sastry (Eds), Red Data Book Ind. Pl. 2: 280. 1987.

#### Figs 1, 2

Epiphytes. Stem 15-22 cm long, profusely rooting at

base, leaves closely arranged above. Leaves 7-35 x 1.1-2 cm, jointed at base, deeply channeled in the middle, V-shaped in cross section, keeled, thick, fleshy and coriaceous, unequally bilobed at apex. Inflorescence a simple and axillary raceme, 6-17 cm long with 2.5-3 mm thick peduncle; sterile bracts 1-2, tubular, covering the inflorescence axis; pedicel+ovary 4-5 cm long; floral bracts 2-2.5 x 4.5-5.5, triangular ovate, gland dotted, acute at apex. Flowers 2-3, pleasantly fragrant, reminding strongly the smell of *Vanda tessellata* / *Cestrum nocturnum*, 4-4.5 cm across, dirty brownish greenish yellow with light tessellations on sepals and petals, white at base and back side; dorsal sepal 2.1-2.4 x 1.1-1.5 cm, ovate-oblong, clawed and obtuse at base, slightly wavy on margins, 7-veined, side veins branched, all veins connected by intraventral bridges; lateral sepals 2.1-2.5 x 1.4-1.5 cm, elliptic, obovate, obtuse at apex, 7-veined, margin at the basal portion backwardly folded; petals 2-2.4 x 1.2-1.3 cm, obovate-oblong, 5-veined, clawed at base, obtusely acute at apex; lip white throughout, with a flash of yellow at inner backwall of sac between the sidelobes; 1.3 cm long with 1 cm long saccate spur, immovably attached to the base of a short columnfoot; side lobes 0.5 x 0.4 cm, oblong, midlobe 1.1 x 0.9 cm, thick, fleshy with 2 keels, medianly deep channeled; spur 0.9-1 x 0.6 cm, wide mouthed, laterally compressed, obtuse at apex, backwall with W shaped orange marking, tip with small papillae; column 6-7 x 3.5-5 mm, white, broadened at apex; anther terminal, operculum 4 x 3.5 mm, 2 celled at base with one flap covering each cell, connected to column by a short neck at base; pollinaria with 2 obovoid pollinia, each pollinium 1.2 x 1.5 mm, cleft, attached by a thin transparent and elastic caudicle to transparent stipe; stipe thin and roughly triangular, folded at base to the broad and roughly ovate viscidium.

*Flowering & Fruiting:* September-December.

*Altitude:* 60-80 m.

*Habitat:* On *Ficus religiosa* L.

*Occurrence:* Tamil Nadu (Coimbatore), Karnataka (Belthangadi, Subramanyam, Mangalapuram) and Kerala (Palghat, Vaulyar, Kannur).

*Distribution:* India (Karnataka, Kerala, Tamil Nadu), Sri Lanka.

*Specimens Examined:* INDIA, Kerala, Nediya-Sreekantapuram, Kannur District, 80 m., 01.12.2001 P. C. Suresh Kumar 31325 (TBGRI); 10.10.2002 P. C. Suresh Kumar 27393 (TBGRI). Paulghatcherry Robert Wight s. n. (W!); Vaulyar Robert Wight s. n. (W!). Karnataka, Near

Subramanyam Oct. 2000 E. George 27390 (TBGT!);  
Belthangadi 18.09.2003 C. Sathish Kumar 27394 (TBGT!).  
**Tamil Nadu**, Coimbatore Wight s. n. Reichenbach Herb.  
Orchid Nr. 45720 (W!); Wight s. n. Reichenbach Herb. Orchid

Nr. 457222, 45725 (W!). Peninsula Indiae Orientalis Herb.  
Wight 2977 (AMES! W!).  
**CEYLON**, Thwaites C.P. 2346 (Reichenbach Herb. Orchid  
Nr. 45723, W!)

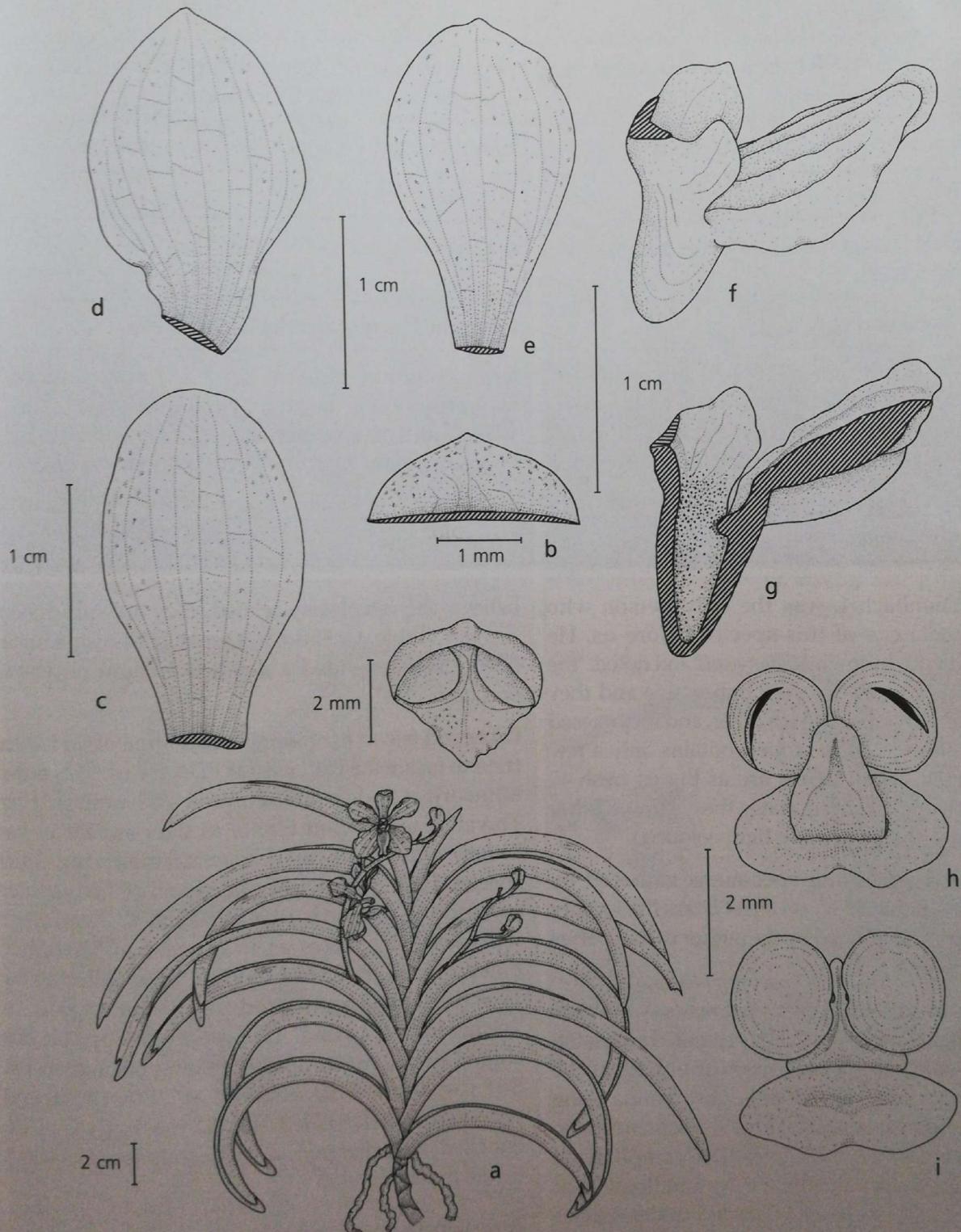


Figure 1. *Vanda wightii* Rchb. f.- a. Habit; b. Floral bract; c. Doral sepal; d. Lateral Sepal; e. Petal; f. Lip, side view; g. Lip, cut through spur sac and lip; h. Operculum; i. Pollinarium, ventral view (drawn after C. Sathish Kumar 27394 by P.C. Suresh Kumar).

Table 1. Differences between *Vanda wightii* Rchb. f. and *V. thwaitesii* Hook. f.

<i>Vanda wightii</i>	<i>V. thwaitesii</i>
Leaves 12-35 x 1-1.8 cm, keeled beneath, unequally bilobed at apex, lobes sharply pointed.	6-18 x 0.9-2 cm, not keeled, praemorse, midvein pointed at apex.
Flowers 4-5 cm across, remind fragrance of <i>Vanda tessellata</i> / <i>Cestrum nocturnum</i> flowers.	3-3.5 cm across; remind fragrance of <i>Mimusops elengii</i> flowers.
Sepals and petals white at base and backside; bent backwards at an acute angle.	Sepals and petals deeply orange at base; backside greenish yellow; not bent backwards.
Floral bracts 4 x 8 mm, 3 veined, obtuse at apex.	Floral bracts 2.1 x 5 mm, 1-veined, acute at apex.
Dorsal sepal 7 veined.	9 veined.
Lateral sepals 7 veined, margin at the basal portion backwardly folded.	8-12-veined, margin not folded.
Petals 5 veined and obtuse at apex.	7-9-veined, acute or apiculate at apex.
Lip pure white; sidelobes 5 x 5 mm, curved inward, obtuse-quadrata; midlobe pure white with 4 fleshy linear lines, downwardly curved and ending in 2 knob like structure. Spur backwall with small papillae.	Creamy white; sidelobes 7.5 x 3 mm, pointed forward, oblong falcate, acute; midlobe creamy white with 8 deep orange lines, apically with 4 fleshy knobs in 2 tiers. Spur backwall without papillae.
Column pure white.	Creamy white.

*Notes:* Reichenbach f. was the only person who studied specimens of this species before us. He compared it with his own *V. stangeana* and noted: 'the leaves of this species are very impressive and they are arranged very close to each other, and they exceed the length of a foot. The umbel contains only a few flowers which, when dried, are as big as fresh *V. concolor* flowers. In dried state, they show leather brown colour, the lip is more light coloured.'

Though good flowering specimens gathered by Wight are available at W, no sheet bears the locality name 'Nilgiris' mentioned by the author of the species in the protologue.

Very few modern studies exist on taxonomy of *Vanda*. Jones ex R. Br. Christenson (1994) presented a skeleton without mentioning *Vanda wightii*, but it can be included under subgenera *Vanda*, Sect. *Vanda* along with *V. tessellata* Hook. ex G. Don, *V. thwaitesii* Hook. f., *V. stangeana* Rchb. f., etc. Motes (1997) emphasized on the ornamental value of species and Roguenant and Chiron (2001) included *V. wightii* under species unknown to them. We sent sketches and photos of this species to Dr Christenson (USA) who is of the opinion that *V. wightii* is the correct name for *V. thwaitesii* Hook. f. (personal communication). We

believe, though closely related, they are sufficiently distinct (Table 1). Sathish Kumar & Suresh Kumar (1998) have provided a detailed account on *Vanda thwaitesii*.

Our good friend Mr Suranjan Fernando of Sri Lanka tried to locate the C.P. 2346 at PDA for us. This is the numbering system inaugurated and practised by Thwaites for Ceylon Plants as they appear in his *Enumeratio Plantarum Zeylaniae* involving 3859 species. However, this has been misapplied to later collections as well. Ideally, each C.P. number represents a species as it appears in Thwaites' *Enumeratio*. C.P. 2346 found at W is collected by Thwaites and annotated as *Vanda wightii* in Reichenbach f.'s hand. This species, it appears, has eluded the attention of Sri Lankan botanists so far. But the same C.P. number at PDA (2 sheets) represents *V. tessellata* (Roxb.) Hook. ex G. Don (labelled *V. roxburghii*), a fairly common species of the Island and India.

### Acknowledgements

We are grateful to Dr M. S. Valiathan, the former Executive Vice President, KSCSTE, Government of Kerala for deputing the senior author to visit Europe



Figure 2. *Vanda wightii* Rchb. f. - Herbarium specimens at W a. Coimbatore specimen collected by Wight (Reichenbach Herb. Orchid Nr. 45720); b. Ceylon specimen collected by Thwaites; c. Paulghatcherry specimen (Reichenbach Herb. Orchid Nr. 45725); d. Wight's specimen at AMES.

in July 2004 during which the type specimens of *Vanda wightii* were studied at Naturhistorisches Museum (W), Wien, Austria. Dr Bruno Wallnöfer (W) provided us with digital images of all collections from Reichenbach herbarium and Dr Ernst Vitek, Curator of W extended hospitality and support during the course of work. Dr Klaus Hohenberger of Basel translated German part of the protologue into English. The first author is grateful to the Ministry of Environment and Forests, Government of India for the award of Dr B.P. Pal National Environment Fellowship and AICOPTAX on Orchids.

## Literature Cited

**Ahmedullah, M. & M. P. Nayar 1986.** *Endemic Plants of the Indian region. 1. Peninsular India.* Botanical Survey of India, Calcutta.

**Alston, A. H. G. 1931.** Supplement to Trimen, H.: *A handbook to the flora of Ceylon.* 6. Dulau & Co., London.

**Christenson, E. A. 1994.** Taxonomy of the Aeridinae with an infrageneric Classification of *Vanda* Jones ex R. Br. Proc. 14<sup>th</sup> World Orchid Conference, Glasgow.

**Fernando, M., Wijesundara, S. & S. Fernando 2003.** *Orchids of Sri Lanka A Conservationist's Companion.* IUCN, Sri Lanka Country Office, Colombo.

**Henry, A. N., Vivekananthan, K. & N. C. Nair 1978(1979).** Rare and Threatened Flowering Plants of South India. *J. Bombay nat. Hist. Soc.* 75:684-697.

**Hooker, J. D. 1890.** Orchidaceae In: Hooker, J. D., *Flora of British India* Vol. 6. L. Reeve & Co, London.

**Hooker, J. D. 1898.** Orchidaceae In: Trimen, H., *Handbook to the Flowering Plants of Ceylon* 4. Dulau & Co., London.

**Jain, S. K. & A. Mehrotra 1984.** *A preliminary Inventory of Orchidaceae in India.* Botanical Survey of India, Calcutta.

**Jayaweera, D. M. A. 1982.** Orchidaceae In: Dassanayake, M. D. & F. R. Fosberg (Ed.). *A Revised Flora of Ceylon* Vol. 2. Amerind Publishing Co., New Delhi.

**Joseph, J. 1987.** *Orchids of Nilgiris.* Botanical Survey of India, Calcutta.

**Mohanam, M. & N. P. Balakrishnan 1991.** Endangered orchids of Nilgiri Biosphere Reserve, India. In: Karuanakaran, C. K. (Ed.). *Proceedings of the Symposium on rare, Endangered and Endemic Plants of the Western Ghats.* Kerala Forests Department, Thiruvananthapuram. pp. 187-199.

**Motes, M. 1997.** *Vandas, their botany, history and culture.* Timber Press, Portland, Oregon.

**Nayar, M. P. & A. R. K. Sastry (Eds) 1987.** *Red Data Book of Indian Plants.* Vol. 2. Botanical Survey of India, Calcutta.

**Noltie, H. J. 2005.** *The botany of Robert Wight.* Ruggell, Liechtenstein: A. R. G. Gantner; Koenigstein.

**Reichenbach, H. G. 1864.** *Vanda wightii.* Ann. Bot. Syst. 6:932.1864

**Roguenant, C. & G. Chiron 2001.** *Les Vandas: découverte d'un groupe d'orchidées Spectaculaires.* Tropicalia, Saint-Genis-Laval.

**Sathish Kumar, C. 1986.** Endemic Orchids of Western Ghats. In: Nair, K. S. S., Gnanaharan, R. & S. Kedarnath (Eds) *Proceedings of the Seminar on Eco-development of Western Ghats.* Kerala Forest Research Institute, Peechi. pp. 51-54.

**Sathish Kumar, C. 1989.** The economic potential of our native orchids and the urgent need to their conservation. In: Balakrishnan Nair, N. (Ed.). *Proceedings of the First Kerala Science Congress.* pp. 13-16.

**Sathish Kumar, C. 1991.** Native Orchids of Western Ghats: A struggle for survival. In: Karunakaran, C. K. (Ed.). *Proceedings of the Symposium on Rare, Endangered and Endemic Plants of the Western Ghats.* Kerala Forest Department, Thiruvananthapuram. pp. 209-214.

**Sathish Kumar, C. 2000.** Rare and endangered orchids of Tamil Nadu. In: Kumaravelu, G. & K. K. Chaudhuri (Eds). *Proceedings of the National Seminar on Endemic and Endangered Plant and Animal species of Eastern and Western Ghats.* Tamil Nadu Forest Department, Madras. pp. 12-25.

**Sathish Kumar, C. & P. C. Suresh Kumar 1998.** The reappearance of *Vanda wightii* J. D. Hook. (Orchidaceae). *Rheedia* 8:249-253.

**Wight, R. 1838-1853.** *Icones Plantarum Indiae Orientalis or Figures of Indian Plants.* Vols. 1-6. J. B. Pharoah, Madras.

**Wight, R. 1840-1850.** *Illustrations of Indian Botany or Figures illustrative of each of the natural orders of Indian plants described in the Author's *Prodromus Florae Peninsulae Indiae Orientalis* with observations on their botanical relations, economical uses and medicinal properties-including descriptions of recently discovered imperfectly known plants.* J. B. Pharoah & American Mission Press, Madras.

**Wight, R. 1846-1851.** *Spicilegium Neilgherrense or a selection of Neilgherry plants drawn and coloured from nature with brief descriptions of each.* Franck & Co., Madras.

Received : 2.2.2006

Revised and accepted : 30.5.2006